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Karljohansverns Verft.....Horten, Norway.
Katsuki, G.....Care of Osaki Shosan Kaisha, Osaka, Japan.
Kawai, S.....Care of Z. P. Maruya & Co., Yokohama, Japan.
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Kölner Bezirksverein Deutscher Ingenieure.....Köln, Germany.
(Lesezimmer Bürgergesellschaft.)
Konuki, K., Commander, I. J. N.....Care of Kaigun Koki Gakko, Yokosuka, Japan.
Kowji, Ito.....Karasumaru Marutamachi, Kioto, Japan.

La Society A. E. G. .....Puizza Corvello I, Genoa, Italy.
The Librarian, Patent Office Library.....Southampton Buildings, Holborn, London, England.
Liste Navale Francaise, Mr. Alte, Libraire.....Toulon, France.
Luis da Cunha de Mancellos, Dieuteur de l'arsenal de la Marine.....Lisbon, Portugal.
Lynch, S. M., Purchasing Agent, National Tube Co.....Frick Building, Pittsburg, Pa.

Manning, Maxwell & Moore .....85, 87, 89 Liberty street, New York, N. Y.
Manufacturers' Advertising Bureau.....237 Broadway, New York, N. Y.
Markey, H. S.....Care Union Iron Works, San Francisco, Cal.
Maruya, Z. P. & Co.....28 Benton Dori Nichorne, Yokohama, Japan.
Mechanics' Library.....Altoona, Pa.
Mechanics Mercantile Library.....San Francisco, Cal.
Meims & Pfenninger.....Müncher-Hirschau, Germany.
Mercantile Marine Bureau, Communication Department..... .....Tokyo, Japan.
Milner, J. W., Engineer Lieutenant, R. N.....Upper Cleasby Rd., Menston, Leeds, England.
Ministero della Marina.....Comitato Per L'Esame Dei Progetti di Navi.
Ministero della Marina, Direzione Generale delle, Costruzione Navila.....Roma, Italy.
Ministero della Marina, Ufficio di Stato Maggiore.....Roma, Italy.
Miyakawa, K.....Kaigunsho, Tokio, Japan.
Morgan, W. A., Warrant Machinist, U. S. N.
Murray, G. W., Engineer Commander, R. N.....Admiralty, Whitehall, London, S. W., England.

Nakajima, Yosohachi, I. J. N.
The Naval Inspector's Office, Parliament Chambers, Great Smith street,
Westminster, London, England.
185 Honmuraño Azabu, Tokio, Japan.
Navigazione Generale Italiana (Alla), Ufficio Tecnico.....Genova, Italy.
Naval War College Library.....Newport, R. I.
Navy Department Library..... Navy Department, Washington, D. C.

Newport News Shipbuilding and Dry Dock Co ..... Newport News, Va.
Newton, J. H., Midshipman, U. S. N.
New York Public Library ..... 40 LaFayette Place, New York, N. Y.
New York Public Library ..... 425 Lafayette street, New York, N. Y.
New York Shipbuilding Co. ..... S. Camden, N. J.
New York Yacht Club ..... 37-41 West 44th street, New York, N. Y.
N. I. D. ..... Care Kegan Paul, Trench, Trübner & Co., 43 Gerrard street, Soho, London, England.

Odero, N., & Co., Ship and Engine Builders ..... Genoa, Italy.
Ohio State University Library ..... Columbus, O.
Onodera, H. ..... 32 Wemyss Road, Blackheath, S. E., London, England.
Onuki, J. ..... Care Naval Dockyard, Yokosuka, Japan.
Osaka-Shosen-Kaisha ..... 64 Tomishimacho, Kitaku, Osaka, Japan.

Patent Office Library ..... South Hampton Building, Holbein, London, England.
Pearce, R. S., Engineer Lieutenant, R. N. ..... West Cross Maunamead, Plymouth, England.
Pellerano, L. C., Sig. ..... Via Gennaro, Serra 20, Naples, Italy.
Pietro Brunelli, Capitano Navali ..... Regis Arsenole, Napoli, Italy.
Public Library ..... Hayes and Franklin streets, San Francisco, Cal.
Public Library ..... 16th and Pond streets, San Francisco, Cal.

Reale Scuola Navale Superiore, il Signor Direttore ..... 1214 di Post, Genoa, Italy.
Rigg, F. B. ..... 1415 Boren avenue, Seattle, Wash.
Robinson, Henry C. ..... 17 Marsh street, Quincy, Mass.
Rossi, Beuvenuto, Engineer, Italian Navy ..... Minestero della Marina, Rome, Italy.
Rotalde, Carlos, Midshipman, P. N. ..... U. S. S. *Missouri*, care Postmaster, New York, N. Y.

Saito, M., Lieutenant Constructor, I. J. N. ..... Admiralty, Tokyo, Japan.
Schmidt, Herrn Fred, Buchhandling ..... Wilhelmshaven, Germany.
Scientific Library ..... U. S. Patent Office, Washington, D. C.
Scott's Shipbuilding and Engineering Co. ..... Greenock, Scotland.
Seattle Public Library ..... Seattle, Wash.
Section Technique des Construction Navales ..... No. 2 Rue Royale, Paris, France.
Section Technique des Constructions Navales, Ministere dela Marine, 2 Rue Royale, Paris, France.
Senhor Don Luiz da Cunlia de Marrcellos, Director Technics de Arsenal de Marinha, Lisbon, Portugal.
Smith, John, & Son ..... Glasgow, Scotland.
Sneddon, J. P., Superintendent, Stirling Co. ..... Barberton, Ohio.
Sotherns Marine Engineering College ..... 59 Bridge street, Glasgow, Scotland.
Sotto Direzione delle Construzioni Navali del R. Cantiere, Castellammare di Stabia, Napoli, Italy.
State Library ..... Sacramento, Cal.
Steiger, E., & Co. ..... Newspaper Box 298, New York, N. Y.
Suda, K. ..... Care of Takata & Co., 60 Wall street, New York City.
Sugi, M. ..... Care of Kaigun Koki Gakko, Yokosuka, Japan.

Taguchi, Kozo, Lieutenant ..... Kure Navy Yard, Kure, Japan.
Takato & Co. ..... 18 Nakanoshima Nichome Kitaku, Osaka, Japan.
Tams, Lemoine & Crane ..... 32 Pine street, New York, N. Y.
Tappen, A. B. ..... 263 W. 73d street, New York, N. Y.
Terngoro, Fujii, Captain, I. J. N. ..... Care Admiralty, Tokio, Japan.
The Naval Constructor ..... United States Naval Station, New Orleans, La.
The Thomas Crane Public Library ..... Quincy, Mass.
Thomas, H. E., Schiffbau Inginieur ..... Grolmanstrasse 21, Charlottenburg, Germany.
Tomonoga, G., Lieutenant ..... 12½ St. James avenue, Boston, Mass.
Toneguchi, Lieutenant Commander, I. J. N. ..... 1424 K street, N. W., Washington, D. C.

Ufficio Tecnico Ministero della Marina.....Roma, Italy.
Ufficio Tecnico della Ro Marina.....Genova, Italy.
University of Illinois Library.....University Station, Urbana, Ill.
University of Michigan Library.....Ann Arbor, Mich.
Ushioku, K., Lieutenant, I. J. N.,
Parliament Chambers, Great Smith street, Westminster, London, S. W., England.

Vickers Sons & Maxim, Ltd.....Barrow-in-Furness, England.
(To the Director, Engine Department, Naval Construction Works.)
Viennot Advertising Agency.....524 Walnut street, Philadelphia, Pa.
Virgilio Giacomuzzi.....Sestri-Ponente, Genoa, Italy.

Waffenabteilung des Reichs-Marine-Amts.....Linkstrasse 7, Berlin W., Germany.
Wallace, John.....6 Lloyd's avenue, Fenchurch street, London, E. C. England.
Washington Society of Engineers.....729 Fifteenth street, N. W., Washington, D. C.
Watonabe, J., Engineer.....Care Fore River Shipbuilding Co., Quincy, Mass.
Webb's Academy and Home for Shipbuilders,
Sedgwick avenue and 188th streets, New York, N. Y.
Welch, J. J.....The Hollies, Westfield avenue, Gosfirth, Newcastle-on-Tyne, England.
Weld, Miss Lydia G.....4801 Huntington avenue, Newport News, Va.
Westinghouse Machine Co., The.....(43284) East Pittsburg, Pa.
Wooda, Takec, Supt. " Giyu-Kautai,"
Care of The Mitsu-Bishi Shipbuilding Yard, Akunoura, Nagasaki, Japan.
Woods, J. S., Ensign, U. S. N.....U. S. S. *Farragut*, Care of Post Master, San Francisco, Cal.
Woodwell, Julian E.....Terminal Building, Park avenue and 41st street, New York City.

Yokura, M.....77 Shirokane-Sanko-Cho, Shibi, Tokio, Japan.
Yoshida, S.....Japan.

EXCHANGES.

American Machinist.....168 Fulton street, New York, N. Y.
American Marine Engineer, The.....315 Dearborn street, Chicago, Ill.
American Shipbuilder.....7 Coenties Slip, New York, N. Y.
American Society of Civil Engineers.....220 West 57th street, New York, N. Y.
American Society of Mechanical Engineers.....29 West 39th street, New York, N. Y.
Army and Navy Journal.....240 Broadway, New York, N. Y.
Army and Navy Register.....National Theater Building, Washington, D. C.
Association Technique Maritime.....16 Rue de l'Arcade, Paris, France.

Brass World and Platers' Guide, The.....220 John street, Bridgeport, Conn.

Canadian Machinery.....10 Front street, Toronto, Canada.
Cassier's Magazine.....12 West 31st street, New York, N. Y.
Club Militar Naval.....Rua do Carmo 43, Lisbon, Portugal.
Collegio degli Ingegneri Navali e Meccanici.....via David Chiossone, N. Y., Genoa, Italy.
Cordel & Renne.....Lietzenburger strasse, Berlin, W., Germany.

Die Turbine.....Kurfursten-Strasse 11, Berlin W. 57, Germany.

Engineer.....33 Norfolk street, Strand, London, W. C., England.
Engineering.....35 Bedford street, Strand, London, England.
Engineering Magazine.....140–142 Nassau street, New York, N. Y.

Engineering News.....St. Paul's Building, 220 Broadway, New York, N. Y.
Engineering Record.....239 West 39th street, New York, N. Y.
Engineers Club.....1317 Spruce street, Philadelphia, Pa.
Engineers' Society of Western Pennsylvania,
803 Fulton Building, 6th street and Duquesne Way, Pittsburg, Pa.

Franklin Institute.....Philadelphia, Pa.

Gas and Oil Power.....3 Oxford Court, Cannon street, London, E. C., England.
General Library, University of Missouri.....Columbia, Mo.

Il Direttore, Della Rivista Marittima.....Rome, Italy.
Institution of Civil Engineers.....Great George street, Westminster, London, S. W., England.
Institution of Engineers and Shipbuilders in Scotland, The.....Glasgow, Scotland.
Institution of Mechanical Engineers, The
Storey's Gate, St. James Park, Westminster, S. W., London, England.
Institution of Naval Architects.....5 Adelphi Terrace, London, W. C., England.

Journal of Royal United Service Institution.....Whitehall, London, S. W., England.
Journal of the United States Artillery.....Fort Monroe, Va.

Librarian Smithsonian Institute.....Washington, D. C.
Liga Naval Portuguesa.....95, Rua Garrett, Lisbon, Portugal.
Literary Digest.....44-60 East 23d street, New York, N. Y.

Machinery.....66 West Broadway, New York, N. Y.
Marine Engineering.....Whitehall Building, 17 Battery Place, New York, N. Y.
Marine Journal.....24 State street, New York, N. Y.
Marine Review and Marine Record.....39-41 Wade Building, Cleveland, Ohio.
Mechanical World.....65 King street, Manchester, England.
Metal Industry, The.....61 Beekman street, New York, N. Y.

Naval Institute.....Naval Academy, Annapolis, Md.
Navy, The.....732 13th street, N. W., Washington, D. C.
Northeast Coast Institution of Engineers and Shipbuilders,
4 St. Nicholas' Buildings, West, Newcastle-upon-Tyne, England.

Page's Weekly, Editorial Department,
Clun House, Surry street, Strand, London, W. C., England.
Popular Mechanics.....25 Washington street, Chicago, Ill.
" Power,".....World Building, New York, N. Y.

Quarterly Digest of Physical Tests.....1424 N. 9th street, Philadelphia, Pa.
Questions Navales.....200 Rue de Rivoli, Paris, France.

Scientific American.....361 Broadway, New York, N. Y.
Schiffbautechnischen Gesellschaft.....Schumanstrasse 2 pr., Berlin, N. W., Germany.
Sibley Journal of Engineering.....Cornell University, Ithaca, N. Y.
Société des Ingenieurs Civils.....19 Rue Blanche, Paris, France.
Steamship, The.....2 Custom House Chambers, Leith, Scotland.
Stevens Indicator.....Stevens Institute, Hoboken, N. J.

Technology Quarterly.....Massachusetts Institute of Technology, Boston, Mass.
Technical World, The Editor.....3321 Armour avenue, Chicago, Illinois.
The Practical Engineer.....359 Strand, London, W. C., England.
Tidskrift for Sövesen.....Horten, Norway.

Western Society of Associated Engineers.....Quincy, Ill.
Western Society of Engineers.....1737 Monadnock Block, Chicago, Ills.
Wisconsin Engineer.....Library of the University of Wisconsin, Madison, Wis.

Yacht, Le.....55 Rue de Chateaudun, Paris, France.
Yale Scientific Monthly.....New Haven, Conn.

Zeitschrift Vereines Deutscher Ingenieure.....Charlottean strasse, 43, Berlin.